

Techniques and equipments for the advanced processing of agro-alimentary products (1st Year of study, 1st Semester)

Credit value (ECTS) 7

Course category

Domain (Imposed)

Course holder:

Phd Lecturer Eng. Vlad Nicolae ARSENOAIA

Discipline objectives (course and practical works)

The aim of the course is to have master the students of the work processes specific to the equipment used in advanced technologies in the food industry. Also of particular importance is the identification of various types of construction machines, equipment and installations in the field of food engineering and the evaluation of technical and functional parameters.

Practical works seek to familiarize the master students with modern equipment and to identify the machine parts, parts and assemblies of the machines used in the technological lines of advanced processing of agri-food products. Special emphasis is placed on designing and interpreting a flowsheet specific to an advanced production process.

Contents (syllabus)

Course (chapters/subchapters)
Advanced technological lines, modern machinery and equipments for the milling industry.
Advanced technological lines, modern machinery and equipments for the bakery industry.
Advanced technological lines, modern machinery and equipments for the oil extraction industry.
Advanced technological lines, modern machinery and equipments for the industrialization of sugar beet.
Advanced technological lines, equipment and installations for the alcohol and alcoholic beverages industry.
Advanced technological lines, modern machinery and equipments for milk processing and cheese making.
Advanced technological lines, equipment and installations for the slaughter of animals and birds.
Advanced technological lines, machinery and equipments for the meat processing industry.

Practical works
General training for NTN and PSI; substantiating, identifying and customizing equipment for advanced processing of agri-food products
Advanced milling and bakery equipment and machinery.
Advanced equipment and machinery for the oil extraction industry.
Advanced equipment and machinery for the milk industry.
Advanced cheese-making machinery and equipment
Advanced meat processing machinery and equipment
Advanced equipment and installations for the alcohol and alcoholic beverages industry
Final colloquium of knowledge evaluation.

Bibliography

1. Cârlescu P. – *Procese și operații în industria alimentară*, vol. I, Ed. PIM Iași, 2016.
2. Stavros Y., Petros T., Nikolaos G. S., Vaios T. K. (eds.) – *Advances in Food Process Engineering Research and Applications*, Springer Science, 2013.
3. Tiziana F., Roumiana P. S.(eds.) – *High Pressure Fluid Technology for Green Food Processing*, Springer International Publishing, 2015.
4. Koutchma T. – *Adapting high hydrostatic pressure (HPP) for food processing operations*, Elsevier Science, Academic Press, 2014.
5. Hosahalli S. R., Marcotte M., Sastry S., Abdelrahim K. – *Ohmic Heating in Food Processing*, CRC Press, 2014.
6. Shreck R. J. – *Focus on Food Engineering*, Nova Science Pub Inc., 2011.
7. Doona C., Kustin K., Feeherry F. – *Case Studies in Novel Food Processing Technologies_ Innovations in Processing, Packaging, and Predictive Modelling*, Woodhead Publishing Series in F, 2010.
8. Passos M. L., Ribeiro C. P. – *Innovation in Food Engineering New Techniques and Products*, CRC Press, 2009.
9. Han Jung H. – *Innovations in Food Packaging*, Food Science and Technology International, Academic Press, 2005.
10. Miller R. B. – *Electronic irradiation of foods an introduction to the technology*, Springer, 2005.
11. Gutulescu I. – *Procese tehnologice moderne din industria conservelor de legume, fructe, carne și pește*, E. D. P., București 1986.
12. Țenu I. – *Operații și aparate în industria alimentară*, vol.II, operații cu transfer de căldură și masă, Ed. Ion Ionescu de la Brad Iași, 2014.

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	Writing examination	80%
Appreciation of the activity during the semester	Oral assessment during the semester, verification tests and final laboratory colloquium.	20%

Person of contact

Phd Lecturer Eng. Vlad Nicolae ARSENOAIA

Faculty of Agriculture - IULS Iași

Aleea Mihail Sadoveanu nr. 3, Iași, 700490, România

telefon: 0040 232 407 551, fax: 0040 232 260 650

E-mail: vnarsenoaia@uaiasi.ro